

Amendments to the Claims:

1. (Currently amended) A method of controlling a genetically-modified multi-cellular plant organism or a part thereof, comprising the following steps:

- (a) providing a multi-cellular plant organism or a part thereof, whereby cells of said multi-cellular plant organism or said part contain a heterologous nucleic acid[[,]] encoding a protein; and
- (b) causing expression of a protein from said heterologous nucleic acid in at least some of said cells[[,]] by delivering a polypeptide to the multi-cellular plant organism or part thereof, said polypeptide rendering said heterologous nucleic acid expressible, said polypeptide being selected from the group consisting of a site-specific recombinase, a flippase, a resolvase, an integrase, a polymerase, a transposase and a transcription factor;

wherein said protein is ~~capable of~~

- (i) contains a protein portion enabling leaving a cell and entering other cells of said multi-cellular plant organism or a part thereof, wherein said protein portion is a domain of a viral movement protein, a domain of a viral coat protein, a domain of a plant or animal transcription factor capable of cell-to-cell or systemic movement, a domain of a plant or animal peptide intercellular messenger, or an artificial peptide capable of enabling cell-to-cell movement;
- (ii) is capable of causing expression of said protein in cells containing said heterologous nucleic acid[[,]] by a DNA or RNA modifying activity of a segment of said protein, said segment being selected from the group consisting of a site-specific recombinase, a flippase, a resolvase, an integrase, a polymerase, and a transposase, or said protein has a segment being a transcription factor inducing transcription of said heterologous nucleic acid; and optionally
- (iii) is capable of controlling a cellular process of interest.

2. (Currently amended) The method of claim 1, wherein cells of said multi-cellular plant organism or a part thereof contain an additional heterologous nucleic acid that is controlled by said protein.

3. (Original) The method of claim 2, wherein said protein causes the production of an RNA and/or a polypeptide from said additional heterologous nucleic acid.

4. (Previously presented) The method of claim 2, wherein said protein causes formation of an expressible operon from said additional heterologous nucleic acid or from an RNA expression product of said additional heterologous nucleic.

5. (Previously presented) The method of claim 2, wherein said protein causes formation of an expressible amplicon from said additional heterologous nucleic acid or from an RNA expression product of said additional heterologous nucleic.

Claims 6-10. (Cancelled)

11. (Currently amended) The method of claim [[9,]] 1, wherein said ~~external signal~~ applied in step (b) is a polypeptide comprising comprises a membrane translocation sequence for enabling entering of said polypeptide into a cell of said multi-cellular plant organism or of a part thereof.

12. (Currently amended) The method of claim [[10,]] 1, wherein the ~~application~~ delivery of said polypeptide does not involve introduction of nucleic acids in cells that code for said polypeptide or for a part of said polypeptide.

13. (Currently amended) The method of claim [[9,]] 1, wherein said ~~signal is a~~ polypeptide ~~that~~ is applied by a pathogenic microorganism that has a system of delivery of a polypeptide into a host cell.

14. (Original) The method of claim 13, wherein said pathogenic microorganism is a virulent or non-virulent *Agrobacterium*.

Claims 15-16. (Cancelled)

17. (Currently amended) The method of claim 1, wherein said leaving a cell and entering other cells comprises cell-to-cell movement or systemic movement in said multi-cellular plant organism or a part thereof.

18. (Previously presented) The method of claim 1, wherein said protein contains a protein portion enabling said leaving a cell and entering other cells.

Claims 19-22. (Cancelled)

23. (Currently amended) The method of claim 1, wherein said multi-cellular plant organism or part thereof provided in step (a) is a transgenic multi-cellular plant organism containing said heterologous nucleic acid stably integrated in the nuclear and/or the plastid genome of the cells.

24. (Cancelled)

25. (Currently amended) The method of claim 2, wherein said additional heterologous nucleic acid is stably integrated in the genome of said multi-cellular plant organism or part thereof.

26. (Currently amended) The method of claim 1, wherein said multi-cellular plant organism is a higher plant.

27. (Currently amended) A genetically-modified multi-cellular plant organism or a part thereof containing a heterologous nucleic acid in cells thereof, whereby said heterologous nucleic acid is adapted such that

- (a) expression of a protein from said heterologous nucleic acid can be caused in cells containing said heterologous nucleic and
- (b) said protein contains a protein portion is capable of enabling said protein of leaving a cell and entering other cells of said multi-cellular plant organism or a part thereof, wherein said protein portion is a domain of a viral movement protein, a domain of a viral coat protein, a domain of a plant or animal transcription factor capable of cell-to-cell or systemic movement, or a domain of a plant or animal peptide intercellular messenger, and
- (c) said protein has a segment having a DNA or RNA modifying activity, said segment being selected from the group consisting of a site-specific recombinase, a flippase, a resolvase, an integrase, a polymerase, a transposase and a transcription factor, whereby said protein is capable of controlling expression of said protein in cells containing said heterologous nucleic acid, or said protein has a segment being a transcription factor inducing transcription of said heterologous nucleic acid, and
- (d) optionally, controlling a cellular process of interest.

28. (Cancelled)

29. (Currently amended) The genetically-modified plant organism or a part thereof as further defined in claim 2.

30. (Currently amended) A system of controlling expression of a protein, comprising a genetically-modified multi-cellular plant organism as defined in claim 27 and a signal for causing an expression of said protein, whereby said multi-cellular plant organism and said signal are designed such that expression of said protein can be initiated by externally applying said signal to said multi-cellular plant organism or a part thereof.

31. (Currently amended) A stably or transiently genetically-modified multi-cellular plant organism or parts thereof obtained or obtainable by the method of claim 1.

Claims 32-34. (Cancelled)